Current Status of Claims

1. (*original*) A device for recognising a container by means of a marking provided on its surface, comprising a camera and light emission means (1, 2, 3; 11, 12, 13) arranged for imaging the marking (4; 14) on the container (5; 15), said camera and light emission means being connected to a

5 processor or the like adapted for recognition, based on a camera-recorded image of the marking, of distinctive features related to the container, and wherein the camera and light emission means faces the marking during the imaging process, where the camera and light emission means comprise one camera (1; 11) and at least two light sources (2, 3; 12, 13), the light sources

10 being positioned in such manner, either on the same or on each side of the camera, that light emitted from the respective light source falls in from a different direction relative to the marking, and that the camera and light emission means is so controlled by the processor that the camera can take at least two images of the marking using light emitted successively from the

15 respective light source or the selectively chosen light source group, said device being *characterized in that* when the marking (4) is provided in an end face of the container (5), then the camera (1) and the light sources (2, 3) are interpositioned so as to fulfil the expression:

$$\alpha \geq \beta + \gamma, \quad \text{wherein}$$

20 α is the angle between the two lines drawn from the centre point of the end face on of the container to the centre point of each light source;

β is the angle between the line drawn from the centre point of the outer light source to the outer edges of the end faces of the container along the respective diameter; and

25 γ is the angle between the two lines drawn from the centre point of the camera lens to each outer edge of the container along the respective diameter.

2. (*amended*) A device for recognising a container by means of a marking provided on its surface, comprising a camera and light emission means (31, 32, 33; 41, 42, 43) arranged for imaging the marking (34; 44) on the container (35; 45), said camera and light emission means being

5   connected to a processor or the like adapted for recognition, based on a camera-recorded image of the marking, of distinctive features related to the container, and wherein the camera and light emission means faces the marking during the imaging process, where the camera and light emission means consists of at least two cameras (31, 32; 41, 42) and one light source

10   (33; 43), the cameras being positioned in such manner, either on the same or on each side of the light source, that the optical axis of the respective camera falls in from a different direction relative to the marking, and that the camera and light emission means is so controlled by the processor that the cameras or the selectively chosen camera group can take at least two images of the

15   marking simultaneously, said device being *characterised in that* when the marking (34) is provided in an end face of the container (35), the cameras (31, 32) and the light source (33) are interpositioned so as to fulfil the expression:

$$\alpha \geq \beta + \gamma, \quad \text{wherein}$$

20   α is the angle between the two lines drawn from the centre point of the
     end face [on] of the container to the centre point of each camera;

    β is the angle between the line drawn from the centre point of the outer camera lens to the outer edges of the end face of the container along the respective diameter; and

25   γ is the angle between the two lines drawn from the centre point of the light source to each outer edge of the container along the respective diameter.

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3. (*original*) A device for recognising a container by means of a marking provided on its surface, comprising a camera and light emission means consisting of one camera (62) and at least one light source (63), and which is arranged for imaging the marking (64) on the container (65), said

5   camera and light emission means being connected to a processor or the like adapted for recognition, based on a camera-recorded image of the marking, of distinctive features related to the container, *characterised by* at least a first pair (67, 69) and a second pair (68, 70) of mirrors, where the mirrors in each pair are facing one another and where the pairs are

10   positioned on opposite sides of the optical axis of said camera (62), one mirror (67) of the first pair being fixedly positioned adjacent to one mirror (68) of the second pair, at an angle to said axis, whereby the marking is shown as two mirror images seen from different directions and the camera is able to take two images of the marking (64) simultaneously.

4. (*previously presented*) A device according to claim 1, characterised in that the camera (1; 11), or the light source (33; 43) is placed at a level above the container (5; 15; 35; 45).

5. (*original*) A device according to claim 1, characterised in that the respective light sources (2, 3) emit light that is synchronised with the exposures of the camera (1).

6. (*original*) A device according to claim 2, characterised in that the light source (33) emits light that is synchronised with the exposure of the respective cameras (31, 32).

7. (*previously presented*) A device according to claim 1, characterised in that the light is short-pulsed light.

8. (*previously presented*) A device according to claim 1, characterised in that the light source (2, 3; 33) consists of at least one light-emitting diode.

9. (*original*) A device according to claim 3, characterised in that the line of intersection between the mirror faces (67, 68) adjacent to the optical axis of the camera is essentially perpendicular to the optical axis, these mirror faces being symmetrically positioned and directed in the opposite direction to each other.

10. (*original*) A device according to claim 9, characterised in that the mirror faces adjacent to the optical axis of the camera are so positioned that one of their sides edges meet.

11. (*original*) A device according to claim 9, characterised in that the mirror faces adjacent to the optical axis of the camera are offset relative to each other along the optical axis.

12. (*previously presented*) A device according to claim 1, characterised in that the imaging is performed when the container (5; 35; 65) is on a conveyor (6; 36; 66) installed in a reverse vending machine for beverage containers.

13. (*previously presented*) A device according to claim 1, characterised in that the processor comprises a comparator designed for recognition, based on the image selected by the processor, of the marking on the container (5; 35; 65) by comparing with a reference archive of markings and thus recognising distinctive features related to the container.

14. (*new*) A device according to claim 2, characterised in that the camera (1; 11), or the light source (33; 43) is placed at a level above the container (5; 15; 35; 45).

15. (*new*) A device according to claim 2, characterised in that the light is short-pulsed light.

16. (*new*) A device according to claim 3, characterised in that the light is short-pulsed light.

17. (*new*) A device according to claim 2, characterised in that the light source (2, 3; 33) consists of at least one light-emitting diode.

18. (*new*) A device according to claim 3, characterised in that the light source (2, 3; 33) consists of at least one light-emitting diode.

19. (*new*) A device according to claim 2, characterised in that the imaging is performed when the container (5; 35; 65) is on a conveyor (6; 36; 66) installed in a reverse vending machine for beverage containers.

20. (*new*) A device according to claim 3, characterised in that the imaging is performed when the container (5; 35; 65) is on a conveyor (6; 36; 66) installed in a reverse vending machine for beverage containers.

21. (*new*) A device according to claim 2, characterised in that the processor comprises a comparator designed for recognition, based on the image selected by the processor, of the marking on the container (5; 35; 65) by comparing with a reference archive of markings and thus recognising distinctive features related to the container.

22. (*new*) A device according to claim 3, characterised in that the processor comprises a comparator designed for recognition, based on the image selected by the processor, of the marking on the container (5; 35; 65) by comparing with a reference archive of markings and thus recognising

5   distinctive features related to the container.